

We claim:

1. A network processing device, comprising:  
a memory for storing a dynamically configurable set of signaling templates;  
a trunk controller for receiving and transmitting line signaling and  
5 a device processor within a signaling state machine for conducting the line signaling  
by executing one of the dynamically configurable signaling templates in the memory.

2. A network processing device according to claim 1 wherein the processor can  
delete an unneeded signaling template from the dynamically configurable set of signaling  
10 templates in the memory.

3. A network processing device according to claim 2 wherein the processor  
deletes the unneeded signaling template from the dynamically configurable set of signaling  
templates in the memory upon receiving a user command.

4. A network processing device according to claim 1, wherein the processor can  
insert a new signaling template to the dynamically configurable set of signaling templates in  
the memory.

5. A network processing device according to claim 4 wherein the processor  
inserts the new signaling template from the dynamically configurable set of signaling  
20 templates in the memory upon receiving a user command.

6. A network processing device according to claim 1 wherein the network  
25 processing device further comprises a digital signaling processor (DSP) for detecting and  
generating tones.

7. A network signaling controller, comprising:  
a storage medium for storing a plurality of signaling templates, the storage medium  
30 storing a data structure including a plurality of records, each record having:  
a template representing a set of directives for controlling line signaling, tone  
generation, and tone detection in the controller; and  
a template name identifying the template representing the set of directives.

8. A network signaling controller according to claim 7 wherein the template includes characters representing the set of directives.

9. A network signaling controller according to claim 8 wherein the characters of the template are drawn from a set that map to an internal set of directives stored in the state machine to be used to specify the exact signaling behavior expected.

10. A storage medium according to claim 8 wherein the template represents a set of directives for controlling a state machine and line signaling, tone generation, and tone detection in a network processing device for an incoming call.

11. A storage medium according to claim 8 wherein the template represents a set of directives for controlling a state machine and line signaling, tone generation, and tone detection in a network processing device for an outgoing call.

12. A method for configuring a trunk controller in a network processing device, the method comprising:  
determining signaling used over a trunk connected to the trunk controller;  
giving the trunk controller a name for a template in a Dynamically Configurable Signaling State Machine (DCSSM) representing the signaling; and  
conducting signaling on the trunk controller using the named template.

13. A method according to claim 12, wherein:  
determining signaling includes:  
determining an incoming signaling for calls incoming to the trunk controller over the trunk; and  
determining an outgoing signaling for calls outgoing from the trunk controller over the trunk; and  
giving the trunk controller a name includes:  
giving the trunk controller an incoming name for a template in the DCSSM representing the incoming signaling; and

giving the trunk controller an outgoing name for a template in the DCSSM representing the outgoing signaling.

14. A method according to claim 12, the method further comprising informing the DCSSM by the trunk controller of the name for the template with which to process calls over the trunk.

15. A method according to claim 14, wherein informing the DCSSM includes: informing the DCSSM by the trunk controller of an incoming signaling name for the template with which to process incoming calls over the trunk; and informing the DCSSM by the trunk controller of an outgoing name for the template with which to process outgoing calls over the trunk.

16. A method for using a Dynamically Configurable Signaling State Machine (DCSSM) in a network processing device for processing signaling over a trunk, the method comprising:

receiving a name of a template representing a signaling; and processing signaling over the trunk according to the template.

17. A method according to claim 16, wherein: receiving a name of a template includes:

receiving an incoming name of an incoming template representing an incoming signaling; and

receiving an outgoing name of an outgoing template representing an outgoing signaling; and

processing signaling includes:

processing incoming signaling according to the incoming template; and

processing outgoing signaling according to the outgoing template.

18. A method according to claim 16, wherein processing signaling includes: receiving the signaling; comparing the signaling with a set of directives represented by the template; and performing the set of directives represented by the template.

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19. A method according to claim 18, wherein processing signaling further includes reporting an error if the signaling does not match the set of directives represented by the template.

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20. A computer-readable medium containing a program for using a Dynamically Configurable Signaling State Machine (DCSSM) in a network processing device for processing signaling over a trunk, the program comprising:

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first reception software to receive a name of a template representing a signaling; and  
processing software to process signaling over the trunk according to the template.

21. A computer-readable medium containing a program according to claim 20, wherein processing signaling includes:

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second reception software to receive the signaling;  
comparison software to compare the signaling with a set of directives represented by the template; and  
performance software to perform the set of directives represented by the template.